

REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

Claims 1-16 are pending in this application, with Claims 1, 6, 7 and 12 being independent.

Examiner Lett is again thanked for indicating that Claim 6 is allowable.

Claims 1-5 and 7-16 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,581,613 to Nagashima et al., hereinafter *Nagashima*.

The Background of the Invention section of the present application describes the transfer of image data between a computer and a digital copying machine. Page 2 of the present application states that in a conventional device, sending scanned image data from the scanner to the computer and sending print image data to the printing unit from the external computer may not be carried out simultaneously through a single bus. Essentially, data can only travel one way at a time through the bus. That is a problem because either the two types of data must take turns or two busses must be used. Both options are undesirable.

Accordingly, page 10, line 15 of the present application describes an embodiment of the present invention, where the transfer of data along a bus is dependent on a scan enable signal and a print enable signal. That is, the scan enable signal allows data to travel from a copy machine to a computer, and the print enable signal allows data to travel from the computer to the copier. The scan enable signal and print enable signal are based on a clock signal, as shown in Fig. 2. As the phases are offset by half, i.e., 180 degrees, one or the other is active at any time.

The scan image data and the print image data are alternately transferred on a pixel by pixel basis through the bus, based on the cycle of the clock signal. The purpose is to allow a single bus to alternately transfer data from a print machine to a host computer and from a host computer to the print machine, thereby achieving substantially "simultaneous" transfer.

Claim 1 broadly encompasses that subject matter and is directed to a digital image copying machine. An image reader reads an image of an original document and generates image data. A printing unit prints based on image data. A bus transmits the image data generated by the image reader to an external computer and transmits image data from the external computer to the printing unit. A signal generator generates a signal based on an operation timing of the printing unit. A switching means, in response to the signal, switches the bus between transmission from the image reader to the external computer and transmission from the external computer to the printing unit.

In contrast to the present application, which is concerned with alternating data transfer through a single bus, *Nagashima* is primarily concerned with encryption of data sent from a color copying apparatus to an external controller, and from the external controller to the color copying apparatus. Figure 1 in *Nagashima* shows a color copying apparatus 5 and an external controller 4 that are electronically connected to one another. An image information signal 1 and an encryption information signal 2 are transmitted between the two devices. Color image information 1 is encrypted and sent from the color copying apparatus 5 to the external controller 4, and an encryption information signal 2 is also sent from the color copying apparatus 5 to the external controller 4. The encrypted color image

signal 1 is then decrypted in accordance with the encryption information signal 2 by an encryption circuit 21 in the external controller 4. When color image data is output from the external controller 4 to the printer unit 13 of the color copying apparatus 5, the encryption information signal 2 is sent from the external controller 4 to the color copying apparatus 5. The encrypted image information signal 1 is decrypted by an encrypting circuit 11 and an image processing circuit 10 in the color copying apparatus. Essentially, *Nagashima* encrypts data and sends the encrypted data along with encryption information that is used to decrypt the encrypted data.

The Official Action brings attention to *Nagashima*'s disclosure in column 3, lines 33-35, referring to image clocks and image sync signals, and relies on that for a disclosure of the claimed subject matter relating to a signal generator that generates a signal based on an operation timing of the printing unit.

Column 4, lines 22-32, of *Nagashima* discloses that the image clock is a clock signal serving as a reference for other signals. The sync signal is used as both a sync signal for use between lines of raster image signals and a sync signal for switching the contents of the encryption information signal 2 into a pattern (1) at the leading edge (A) and the pattern (2) at the leading edge (B). Each pattern represents the encryption signal and contains a number indicating the type of encryption. Essentially, the image clock and image sync signals are used to vary the type of encryption applied to signals and has nothing to do with switching the direction that information is transferred along a bus terminal.

Claim 1 is allowable at least because *Nagashima* does not disclose the claimed subject matter relating to a signal generator that generates a signal based on an operation timing of a printing unit, and a switching means that, in response to

the signal, switches the bus between transmissions from the image reader to the external computer and transmission from the external computer to the printing unit. Rather, as noted above, the image clock and sync signal are used to encrypt the data, and a switching means does not switch transmissions of the bus in response to the image clock signal or the sync signal. Should this rejection be maintained, it is requested that it be explained how the image clock and image sync signals are used to switch the direction of the bus.

Claims 7 and 12 are allowable for similar reasons as those set forth above with regard to Claim 1.

Claims 2-5, 8-11 and 13-16 are allowable at least by virtue of their dependence from allowable independent claims, and also because they additionally define over the cited document. For example, Claims 2 and 8 recite that the signal generated by the signal generator is a clock signal issued based on an operation timing for each pixel. The Official Action points to *Nagashima*'s disclosure in column 3, lines 33-35 of the clock signal, and asserts that the clock signal is "issued based on an operation timing for each pixel." However, that portion of *Nagashima* in its entirety recites:

Note that image clocks, image sync signals, communication lines for performing condition control of the apparatus, and the like are omitted from Fig. 1.

That portion of *Nagashima* does not state that the clock signal is based on operation timing for each pixel. Additionally, a word search was performed in *Nagashima* and the word "pixel" only appears in column 13, line 64 and is unrelated to the above-noted subject matter. Should this rejection be maintained, it is

requested that it be shown where or how *Nagashima* discloses or suggests a clock signal based on operation timing for each pixel.

Similarly, Claims 3 and 9 recite that the signal generated by the signal generator is a horizontal synchronization signal issued based on an operation timing for each line. The Official Action again points to *Nagashima*'s disclosure in column 3, lines 33-35 of the clock signal, and asserts that the clock signal is "issued based on an operation timing for each line" and directs attention to Figures 2 and 5. However, that portion of *Nagashima* and the portions referring to Figures 2 and 5, do not refer to issuing a clock signal based on an operation timing for each line. Therefore, should the rejections be maintained, it is requested that it be shown where or how *Nagashima* refers to a line, as recited in the claims, and that it be shown where or how *Nagashima* discloses or suggests issuing a clock signal based on an operation timing for each line.

Claim 14 recites that a synchronization signal is issued on an operation timing for each line. For reasons along the lines of those set forth with regard to Claims 3 and 9, Claim 14 is not disclosed or suggested by *Nagashima*.

For at least the above-reasons, it is requested that all the rejections be withdrawn and that this application be allowed in a timely manner.

In the event that there are any questions concerning this amendment, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.


Respectfully submitted,

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(including attorneys from BURNS, DOANE, SWECKER & MATHIS)

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